

CLAIMS:

1. A cellular thermoplastic polymer foam having an average cell diameter of greater than 4 mm.

2. A cellular thermoplastic polymer foam having an average cell diameter of greater than 2 mm wherein greater than 50 percent of the cells have been opened by mechanical means.

3. A cellular thermoplastic polymer foam according to Claim 2 wherein the average cell diameter is greater than 3 mm.

4. A cellular thermoplastic polymer foam according to Claim 3 wherein the average cell diameter is greater than 4mm.

5. A foam according to Claim 1 further comprising a fire retardant.

6. A foam according to Claim 1 wherein the cellular thermoplastic polymer foam is prepared from an olefinic polymer.

7. A foam according to Claim 6 wherein the olefinic polymer is selected from ethylenic polymers, copolymers, or blends thereof.

8. A foam according to Claim 6 wherein the olefinic polymer is polypropylene.

9. A foam according to Claim 8, wherein the thermoplastic polymer further comprise(s) polyethylene resin(s).

10. A foam according to Claim 7, wherein the ethylenic polymer is a low density polyethylene.

11. A foam according to Claim 9, wherein the polyethylene resin(s) comprise a low density polyethylene.

12. A foam according to Claim 9, wherein the thermoplastic polymer further comprises an ethylenic copolymer and a low density polyethylene.

13. A foam according to Claim 1, wherein the cellular thermoplastic foam is an extruded foam in which the cells are elongated and the orientation of cell elongation is in the extrusion direction.

14. A foam according to Claim 2, wherein the cellular thermoplastic foam is an extruded foam in which the cells are elongated and the orientation of cell elongation is in the extrusion direction.

5 15. A foam according to Claim 7, wherein the cellular thermoplastic foam is an extruded foam in which the cells are elongated and the orientation of cell elongation is in the extrusion direction.

16. A foam according to Claim 8, wherein the cellular thermoplastic foam is an extruded foam in which the cells are elongated and the orientation of cell elongation is in the extrusion direction.

10 17. A foam according to Claim 7, wherein the cellular thermoplastic foam is in a coalesced strand form.

18. A foam according to Claim 8, wherein the cellular thermoplastic foam is in a coalesced strand form.

15 19. A foam according to Claim 14, wherein the cellular thermoplastic foam is in a coalesced strand form.

20. A foam according to Claim 2, wherein the cellular thermoplastic foam is crosslinked.